

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re Patent Application of:
SYKES ET AL.

Confirmation No.: 9094

Application No.: 10/677,250

Filed: October 3, 2003

Art Unit: 3683

For: BRAKE ACTUATOR

Examiner: T. WILLIAMS

APPEAL BRIEF

MS APPEAL BRIEF - PATENTS

Commissioner for Patents
P.O. Box 1450
Alexandria, VA. 22313-1450

Dear Sir:

As required under 37 C.F.R. § 41.37(a), this brief is timely filed within two months of the Notice of Appeal filed on September 18, 2007, and is being submitted in response to the Final Office Action mailed July 24, 2007 and the Advisory Action mailed September 10, 2007. No extensions of time are due with this Brief.

The Director is authorized to charge the \$500.00 fee for filing a brief in support of appeal pursuant to 37 C.F.R. §41.20(b)(2). The Director is further authorized to charge any additional fees that may be due or credit any overpayment to Deposit Account No. **03-3975** from which the undersigned is authorized to draw.

This brief contains items under the following headings as required by 37 C.F.R. § 41.37 and M.P.E.P. § 1205.2:

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I. REAL PARTY IN INTEREST

The real party in interest for this appeal is VENTRA GROUP INC, Ontario, Canada. Evidence of this interest is provided by way of an Assignment to VENTRA GROUP INC recorded in the U.S. Patent Trademark Office at Reel/Frame: 014582/0715.

II. RELATED APPEALS AND INTERFERENCES

There are no other appeals, interferences, or judicial proceedings which will directly affect or be directly affected by or have a bearing on the Board's decision in this appeal.

III. STATUS OF CLAIMS

A. Total Number of Claims in Application:

8 claims are pending, of which claims 17, 23 and 31 are independent.

B. Current Status of Claims

1. Claims canceled: 1-16, 21-22, 25-30, 32-34 and 36
2. Claims withdrawn from consideration but not canceled: NONE
3. Claims pending: 17-20, 23-24, 31, and 35
4. Claims allowed: NONE
5. Claims rejected: 17-20, 23-24, 31, and 35

C. Claims On Appeal: Claims 17-20, 23-24, 31, and 35

IV. STATUS OF AMENDMENTS

An Amendment after Final Rejection was filed on August 29, 2007 to correct minor typographical errors in response to the Final Office Action of July 24, 2007. This Amendment merely corrects minor (one word) typographical errors in independent claims 23 and 31. The Advisory Action mailed on September 10, 2007 indicated that the Amendment after Final Rejection was entered by the Examiner.

V. SUMMARY OF CLAIMED SUBJECT MATTER

To aid the Honorable Board's understanding of the claims on appeal, an optional plain language overview of Appellants' claimed invention is provided below in § V.A.

In compliance with the Patent Rules, independent claims 17, 23 and 31, are described in § V.B. below, and include references and citations to the specification, drawings, and reference numerals. Citations in support of the claimed subject matter are made with respect to the page and line numbers of the originally-filed Specification, in the format "*p. x, ll. y-z*" or "*p. x, l. y*", and/or with reference to the Drawings, in the format "*element X, FIG. Y*".

Such description is intended to facilitate an understanding of the claims by the Board Members and is not intended as a comprehensive claim construction, such as used in the context of an argument of invalidity or infringement. Any reference to more than one reference number or character for any particular claimed element or limitation is illustrative only and is not to be construed as an admission that the claims are limited to any, or all, of the particularly disclosed embodiments.

A. Plain Language Overview

This application discloses a brake actuator for applying tension to a brake cable and a method for forming a brake actuator. The actuator includes a mounting bracket, a brake actuator lever mounted for pivotal movement relative to the mounting bracket in brake-applying and brake-releasing directions, and a cam-and-drum member mounted for rotation relative to the brake actuator lever. The cam-and-drum member is formed as one integral part, including a protruding drum portion and a cam portion integral with the drum portion. The present application also discloses a brake actuator with a one-piece cam member that is not necessarily limited to being part of a cam-and-drum member.

In Appellants' disclosed and claimed method, a sheet metal flange portion that is part of, and integral and continuous with the cam member, is progressively stamped to initially bend the flange portion at an angle to the cam member, and then by subsequent stamping, the flange portion is further bent, into a general U-shape so as to define a cable guide. The cable guide is formed with opposing side walls that are integral and continuous as one-piece with the cam member to enable the brake cable to be wound onto the cam member.

As is discussed in various portions of Appellants' disclosure, the one-piece integral construction overcomes various problems of conventional approaches, *e.g.*, prevention of the brake cable being wedged between the parts, since the U-shape is formed by a one-piece sheet-metal member.

B. Summary of Claimed Subject Matter with Reference to the Disclosure

Independent claim 17, as it currently stands, sets forth the following:

17. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle, (at least see Specification at *p. 2, ll. 23-24* and original claim 17) the method comprising:

providing a brake actuator lever (at least see Specification at *p. 2, l. 25, p. 4, l. 30-p. 5, l. 7*; element "A", FIGS. 1 and 2; and original claim 17);

providing a cam member (at least see Specification at *p. 2, l. 25*; element "160", FIG. 2; and original claim 17), including progressively stamping a sheet metal flange portion that is part of and integral and continuous with the cam member to (a) initially bend, by stamping, the flange portion at an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide (see element "406", FIG. 10) with opposing side walls for receiving the brake cable and enabling winding thereof onto the cam member, wherein the opposing side walls are integral and continuous as one-piece with the cam member (at least see Specification at *p. 10, ll. 18-26*; and element "402", FIG. 10);

providing a mounting bracket (at least see Specification at *p. 2, l. 28, p. 5, ll. 15-16*; element "44", FIGS. 1 and 2; and original claim 17); and

pivotaly mounting the brake actuator lever and the cam member for pivotal movement relative to the mounting bracket in brake applying and releasing directions, the cam member being provided on the brake lever such that the movement of the brake lever in the brake applying direction winds the cable

onto the cam member for applying tension to the cable for activating the brake system (at least see Specification at *p. 2, l. 28-32, p. 8, l. 29-p. 9, l. 10*; and original claim 17).

Independent claim 23, as it stands after amendment, sets forth the following:

23. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle (at least see Specification at *p. 2, ll. 33-34* and original claim 23), the method comprising:

stamping a single piece of sheet metal to initially form a cam-and-drum member as an integral and continuous one-piece part including a protruding drum portion and a cam portion integral and continuous with the drum portion, the cam portion having a flange portion integral and continuous with the cam portion (at least see Specification at *p. 3, ll. 1-4, p. 10, ll. 18-26*; element "402", FIG. 10; and original claim 23);

progressively stamping the flange portion to (a) initially bend, by stamping, the flange portion at an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide for receiving the brake cable and enabling winding thereof onto the cam portion, wherein the opposing side walls are integral and continuous as one-piece with the cam-and-drum member (at least see Specification at *p. 3, ll. 1-4, p. 10, ll. 18-26*; and element "402", FIG. 10);

providing a mounting bracket (at least see Specification at *p. 3, l. 4, p. 5, ll. 15-16*; element "44", FIGS. 1 and 2; and original claim 23);

mounting a brake actuator lever for movement relative to the mounting bracket in brake applying and releasing directions (at least see Specification at *p. 3, ll. 4-5, p. 4, ll. 30-31, p. 8, ll. 9-13*; element "A", FIGS. 1 and 2; and original claim 23);

rotatably mounting said cam-and-drum member for rotation relative to the brake actuator lever (at least see Specification at *p. 3, ll. 6-7* and original claim 23);

providing a clutch releasably coupling the cam-and-drum member to the brake actuator lever such that the cam-and-drum member rotates relative to the mounting bracket with movement of the brake actuator lever at least in the brake applying direction, thereby winding the brake cable onto the cam portion and applying tension to the cable for activating the brake system, the clutch being operable to release the cam-and-drum member from the lever such that the cam-and-drum member is able to rotate relative to the brake actuator lever at least when the lever is in a brake released position (at least see Specification at *p. 3, ll. 7-13* and original claim 23); and

connecting a spring to the cam-and-drum member, the spring biasing the cam-and-drum member in a slack take-up direction relative to the lever to wind the cable thereon for taking up cable slack when the clutch releases the cam-and-drum member from the lever (at least see Specification at *p. 3, ll. 14-16* and original claim 23).

Independent claim 31, as it stands after amendment, sets forth the following:

31. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle (at least see Specification at *p. 2, ll. 33-34* and original claim 23), the method comprising:

stamping a piece of sheet metal to initially form a cam member having an integral and continuous flange portion (at least see Specification at *p. 3, ll. 1-4, p. 10, ll. 18-26*; element "402", FIG. 10; and original claim 23);

progressively stamping said flange portion to (a) initially bend, by stamping, the flange portion at an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape with opposing side walls integral and continuous as one-piece so as to define a cable

guide for receiving the brake cable and enabling winding thereof onto the cam member, wherein the opposing side walls are integral and continuous as one-piece with the cam member (at least see Specification at *p. 3, ll. 1-4, p. 10, ll. 18-26*; element "402", FIG. 10; and original claim 23);

providing a mounting bracket (at least see Specification at *p. 3, l. 4, p. 5, ll. 15-16*; element "44", FIGS. 1 and 2; and original claim 23);;

pivotally mounting a brake actuator lever for pivotal movement relative to the mounting bracket (at least see Specification at *p. 4, ll. 30-31* and original claim 23);

rotatably mounting said cam member for rotation relative to said brake actuator lever (at least see Specification at *p. 3, ll. 6-7* and original claim 23);

providing a clutch releasably coupling said cam member to said brake actuator lever such that said cam member rotates with pivotal movement of said brake actuator lever relative to said mounting bracket at least in a brake applying direction relative to said mounting bracket, thereby winding the brake cable onto the cam member and applying tension to the cable for activating the brake system, said clutch being operable to release said cam member from the lever such that said cam member is able to rotate relative to said brake actuator lever at least when said lever is in a brake released position (at least see Specification at *p. 3, ll. 7-13* and original claim 23); and

connecting a spring to the cam member, said spring biasing said cam member in a slack take-up direction relative to said lever to wind the cable thereon for taking up cable slack when said clutch releases said cam member from the lever (at least see Specification at *p. 3, ll. 14-16* and original claim 23).

VI. GROUNDS OF REJECTION TO BE REVIEWED ON APPEAL

The grounds of rejection submitted for review are those identified in the Final Office Action, as follows:

- A. Unpatentability rejection of claims 17-20, 23, 24 and 31 under 35 U.S.C. 103(a) as allegedly being unpatentable over US 6,282,980 to Sykes in view of US 2,929,345 to Zatyko, Sr.**

The Arguments presented below are directed to the independent claims such that the patentability of the various dependent claims rises and falls on the patentability of the independent claims.

- B. Unpatentability rejection of claim 35 under 35 U.S.C. 103(a) as allegedly being unpatentable over Sykes and Zatyko, Sr. in further in view of US 5,303,610 to Noel et al.**

The patentability of dependent claim 35 stands or falls on the patentability of independent claim 17 from which it depends. Accordingly, separate arguments for the patentability of claim 35 are not presented in this Brief.

VII. ARGUMENTS

At the outset, the prior art rejections are improper because the Examiner has not presented a *prima facie* case of obviousness with respect to the claims on appeal, and the rejection must fail for at least two reasons. First, none of the asserted references, whether taken alone or in combination, teach or suggest the entire claimed combination of method steps. Secondly, neither a rational reason nor proper motivation to combine the references in the manner suggested has been provided by the Examiner, in particular because the secondary reference to Zatyko and other art of record clearly teach away from Appellants' claimed invention. Accordingly, Appellants respectfully traverse the rejections set forth by the Examiner.

- A. The Examiner has not made the required *prima facie* case for unpatentability of claims 17-20, 23, 24 and 31 under 35 U.S.C. §103(a) over US 6,282,980 to Sykes in view of US 2,929,345 to Zatyko, Sr.**

Appellants respectfully point out that, to establish a *prima facie* case of obviousness, three basic criteria are required. First, there must be some apparent reason, suggestion or motivation, either in the references themselves or in the knowledge generally available to one of ordinary skill in the art, to modify the reference or to combine reference teachings. Second, there must be a reasonable expectation of success. Finally, the prior art reference must teach or

suggest all the claim limitations.¹ Further, the apparent reason, teaching, or suggestion to make the claimed combination and the reasonable expectation of success must both be found in the prior art, not in applicant's disclosure.²

The Supreme Court recently held that it is necessary, *inter alia*, for a court to look to interrelated teachings of multiple patents in order to determine whether there was an "apparent reason" to combine the known elements in the claimed manner and, in this regard, the Court held "[t]o facilitate review, this analysis should be made explicit."³ "[R]ejections on obviousness grounds cannot be sustained by mere conclusory statements; instead, there must be some articulated reasoning with some rational underpinning to support the legal conclusion of obviousness."⁴ The Examiner has not met this burden, as discussed with more particularity below.

1. Sykes in view of Zatyko, Sr. do not teach or suggest all the claimed limitations.

a. Discussion of Sykes

According to the Abstract, Sykes merely discloses an embodiment of a self-adjusting parking brake actuator for a vehicle and which includes an eccentrically-mounted self-adjust cam assembly. The cam assembly is mounted eccentrically to the lever axis to provide a variable mechanical advantage during actuator stroke. The eccentric offset for the self-adjusting cam is less than the outside radius of the cam to reduce the overall space requirements of the actuator.

Admittedly, Sykes teaches the basic components of a brake actuator, but it lacks the integral relationship between the cam or cam-and-drum member and the flange portion that is deformed into the general U-shape, as recited in the independent claims. The Examiner asserts that Sykes teaches or suggests *most* limitations of independent claims 17, 23, and 31, but admits that Sykes is deficient in providing a teaching or suggestion that the variously claimed cam-and-drum member is formed *by progressively stamping a flange portion on a piece of sheet metal into a U-shaped groove defining a cable guide*. More specifically, Sykes also fails to teach or suggest that the flange portion is progressively stamped to "(a) initially bend, by stamping, the

¹ See MPEP §2143.

² *In re Vaack*, 947 F.2d 488, 20 USPQ2d 1438 (Fed. Cir. 1991) and See MPEP §2143.

³ *KSR Int'l. Co. v. Teleflex Inc.*, 550 U.S. ____ (see p. 14), 127 S.Ct 1727, 1731 (2007).

⁴ See *Id.*, citing *In re Kahn*, 441 F.3d 977, 988, 78 USPQ 2d 1329, 1336 (Fed. Cir. 2006).

flange portion at an angle to the cam member [or cam-and-drum member] and then (b) further bending, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide", as recited in claim 17. Essentially the same limitations are found in independent claims 23 and 31.

Instead, Sykes teaches the assembly of separate components to define the cable guide. Moreover the independent claims define the cable guide as having opposing side walls that are "integral and continuous as one piece" with the cam or cam-and-drum member. This is clearly not the case in Sykes, where the alleged corresponding structure is assembled from multiple pieces.

Because the cable guide in Sykes is assembled from two-pieces, it suffers the problem of cable wedging, and adds more manufacturing costs. With regard to the wedging, the region where the two parts meet provides a "seam" where the cable can work into, thus causing wedging. Further, higher forces can cause part separation, allowing the wedging to become deeper and more problematic. This is a significant issue in brake actuators, because the cable tension needs to be controlled, and the operation needs to be smooth for the user. The tension cannot be so high that the brakes are not released, and likewise cannot be so low that the brakes are not fully applied.

b. Discussion of Zatyko, Sr.

To overcome the admitted deficiency of Sykes, the Examiner offers Zatyko, Sr. ("Zatyko") as allegedly disclosing the missing features and asserts, in particular on page 3 of the Final Office Action, that "Zatyko, Sr. teaches a pulley, *which is effectively a cam-and-drum member* (drum portion 11 is equivalent to drum member 72 in Sykes), formed from a single piece of sheet metal through a progressive stamping process (see figures 1-6)." (*emphasis added*).

The Examiner goes on to assert, without foundation, that "[i]t would have been obvious...to have constructed the cam-and-drum member of Sykes by progressively stamping from a single piece of sheet metal a cam-and-drum member having a flange portion deformed into a general U-shape as taught by Zatyko, Sr." Appellants respectfully traverse this mischaracterization of the applied art, as discussed further below.

As stated in the introductory portion of Zatyko, Sr. ("Zatyko") at least at col. 1:15-51, Zatyko is directed to a method for making a drive pulley. Appellants submit that drive pulleys and brake actuator cable guides are fundamentally different not only because of their different shapes, but also because of the different functions performed, as discussed further below. For example, drive pulleys necessarily operate by providing a frictional interface between the groove and the drive belt. In contrast, Appellants' cable guide does not rely upon a frictional interface between U-shaped cable guide and the cable. In fact, friction or wedging between the cable and the U-shaped guide is specifically disfavored, as discussed at least in paragraphs [0007] and [0052] of Appellants' disclosure. Instead, it is beneficial for the cable to easily wind up on and unwind from the guide.

c. Specific Deficiencies of Sykes and Zatyko

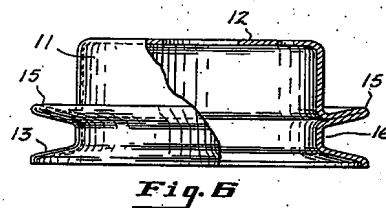
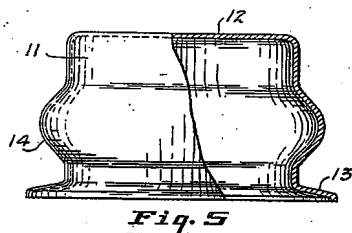
The applied art, either alone or in combination, does not teach or suggest a method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle which includes, *inter alia*, "...progressively stamping a sheet metal flange portion that is part of and integral and continuous with the cam member to (a) ***initially bend, by stamping***, the flange portion at an angle to the cam member and then (b) ***further bend, by subsequent stamping, the flange portion into a general U-shape*** so as to define a cable guide...", as recited in independent claim 17.

Further, the applied art, either alone or in combination, does not teach or suggest a method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle which includes, *inter alia*, "...progressively stamping the flange portion to (a) initially bend, by stamping, the flange portion of an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide for receiving the brake cable...", as recited in independent claim 23.

Finally, the applied art, either alone or in combination, does not teach or suggest a method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle, wherein the method includes, *inter alia*, "...progressively stamping said flange portion to (a) initially bend, by stamping, the flange portion of an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape...", as recited in independent claim 31.

In all of the claims on appeal, Appellants bend the same flange multiple times to create the U-shape cable guide. Sykes clearly does not teach these limitations as its cable guide is assembled from multiple parts, as discussed above. Further, Zatyko does not teach this because two separate flanges are created to make the walls, allegedly corresponding to the cable guide.

Specifically, in Zatyko a first flange 13 is formed that defines one wall. Then, a second flange 15 is created by a secondary deformation process to define the second wall. This can best be appreciated from FIGS. 5 and 6 of Zatyko, included below. Clearly, the same flange is not bent multiple times into a general U-shape, as required by each of the independent claims.



Zatyko '345 (FIGS. 5-6)

Accordingly, since the suggested combination of Sykes and Zatyko does not teach or suggest all the claimed limitations, reversal of the rejections and allowance of independent claims 17, 23, and 31 by the Honorable Board are respectfully requested. In addition, since dependent claims 18-20, 24, and 35 variously and ultimately depend from allowable independent claims 17 and 23, these claims are submitted as being allowable at least on that basis, without further recourse to the additional patentable features recited therein.

2. **The Examiner has not provided an apparent or rational reason to combine Sykes and Zatyko, Sr. in the manner suggested, at least because Zatyko teaches away from Appellants' claimed invention**

As a further basis for finding that the Examiner has failed to make a *prima facie* case of unpatentability, Appellants submit that a person of ordinary skill in the art would not be motivated to combine the references in the manner suggested by the Examiner, for at least the three reasons discussed below.

a. There is no Reason to Combine Zatyko with Sykes

The Examiner combines Sykes (one Appellant's own prior work) with Zatyko which, as discussed above, is directed to a method of making a drive pulley. In contrast, and as discussed at least at paragraphs [0007] and [0052] of Appellants' present disclosure, Appellants specifically disclosed that such prior art designs, including related work (Sykes '980) applied in the present rejection, result in an undesirable wedging action of the cable in the cable guide. Appellants' general U-shaped cable guide avoids wedging problems. Furthermore, Zatyko is directed to a drive pulley, which relies on frictional wedging to transmit motion between the pulley and belt. This is the opposite of the advantage Appellants' claimed invention seeks to achieve, namely, reducing interference between the cable guide and the cable. Hence, there is no reason for a person of ordinary skill in the art to look to the teachings of Zatyko.

b. The General State of the Art does not Motivate the Combination of Sykes and Zatyko

The previously applied references to Perisho (US 5611249 and US 5533420) (discussed in the most recent response to the Non-Final Office Action mailed January 4, 2007) are submitted as representing known parking brake systems with one-piece cams. A person having skill in the art would, by definition, be fully aware of the complete teachings of these references.

For example, a person having skill in the art would be aware that the shape of the alleged cam 116 in Perisho '249 cannot be formed by stamping.⁵ Such a configuration would more likely be made by casting or powdered metal, as taught in Perisho '420, also previously cited by the Examiner.

Indeed, the hypothetical person of ordinary skill in the parking brake art seeking to make a one-piece cam (assuming for the sake of argument one would even be motivated to do so), would be aware of Perisho '420 and its stated advantages concerning powdered metal forming for such a part. To use a stamping process to form the cam member 49 would ignore the advantages taught in Perisho '420. In Perisho '420, the structure 124 (referred to as a cable track) that corresponds to the claimed cam member is made from a powdered metal process. The

⁵ See App. B, the previously entered Rule 1.132 Declaration of Steven Demoe (of record) dated 6/8/07 ("Demoe Decl.") at ¶¶ 2-6 (explaining that the dual flange structure in Perisho '249, as a practical matter, cannot be stamped).

'420 patent discloses that the metal is porous, and specifically points out the advantage of impregnating the structure with damping oil.⁶

This effect asserted as being desired by Perisho cannot be achieved when using a sheet metal stamping process.⁷ Powdered metal processes are vastly different from stamping, and consist of compressing powdered metal at high pressure to fuse the powder together into the final part. Because the metal is powdered, the formed part can have a level of porosity. It is this porosity that enables structure 124 in Perisho '420 to be impregnated with oil, which is identified as being an advantage of the Perisho '420 construction.

If one were to modify the construction in either Perisho '249 or '420 such that it is made in accordance with the method claims on appeal in this application, that advantage would be lost. Stamped sheet metal cannot be made with sufficient porosity for oil impregnation and still be used as a practical matter in the claimed context. One of ordinary skill in the art would not ignore such a teaching, and this teaches away from the claimed invention.⁸ "A reference may be said to teach away when a person of ordinary skill, upon reading a reference, would be discouraged from following the path set out in the reference, or would be led in a direction divergent from the path that was taken by the applicant."⁹ Clearly, the claimed invention is a "divergent path" from the allegedly advantageous powdered metal process in the art.

Accordingly, for yet another reason, Appellants submit that a person of ordinary skill in the art, armed with knowledge of the teachings of Perisho '249 and '420 with respect to the state of the parking brake art, would not have a rational reason to modify, or be motivated to modify Sykes with the teachings of Zatyko in the manner suggested by the Examiner.

c. Sykes and Zatyko are Combinable only by Impermissible Hindsight

It is impermissible within the framework of 35 U.S.C. §103 to pick and choose from any one reference only so much of it as will support a given position to the exclusion of other parts

⁶ See Perisho '420 patent at column 3, lines 18-25, and column 5, lines 48-61.

⁷ See App. B, Demoe Decl. at ¶ 3 *et seq.*

⁸ See MPEP 2145.X.D

⁹ *In re Gurley*, 27 F.3d 551, 553, 31 USPQ 2d 1130, 1131 (Fed. Cir. 1994); *see KSR*, 127 S. Ct. at 1739-40 (explaining that when the prior art teaches away from a combination, that combination is more likely to be non-obvious).

necessary to the full appreciation of what such reference fairly suggests to one skilled in the art.¹⁰ Further in this regard, As the Court of Customs and Patent Appeals, predecessor to the Federal Circuit, has held:

All relevant teachings of cited references must be considered in determining what they fairly teach to one having ordinary skill in the art. The relevant portions of a reference include not only those teachings which would suggest particular aspects of an invention to one having ordinary skill in the art, but also those teachings which would lead such a person away from the claimed invention.¹¹

The rejections in the Official Action amount, in substance, to nothing more than hindsight reconstruction of Appellants' invention by relying on isolated teachings of the applied art, without considering the overall context within which those teachings are presented. Without benefit of Appellants' disclosure, a person having ordinary skill in the art would not know what portions of Sykes and Zatyko to consider, and what portions to disregard as irrelevant or misleading.

VIII. CONCLUSION

For at least the foregoing reasons, it is respectfully submitted that claims 17-20, 23-24, 31, and 35 are not rendered obvious by any combination of the references applied under 35 U.S.C. §103(a). Accordingly, Appellants respectfully request the Honorable Board to reverse the rejection of these claims and direct that the claims be passed to issue.

¹⁰ *Bausch & Lomb, Inc. v. Barnes-Hind/Hydrocurve, Inc.*, 796 F.2d 443, 230 USPQ 416 (Fed. Cir. 1986).

¹¹ *In re Mercier*, 515 F. 2d, 1161, 1166, 185 USPQ 774, 778 (CCPA 1975).

The following appendices to this Brief are provided, as required under the Patent Rules:

Appendix A Claims on appeal (claims 17-20, 23-24, 31, and 35)

Appendix B Evidence (previously submitted Rule 1.132 Declaration of Steven Demoe)

Appendix C Related Proceedings (NONE).

Date: September 21, 2007

Respectfully submitted,

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APPENDIX A

Claims Involved in the Appeal of Application Serial No. 10/677,250

17. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle, the method comprising:

providing a brake actuator lever;

providing a cam member, including progressively stamping a sheet metal flange portion that is part of and integral and continuous with the cam member to (a) initially bend, by stamping, the flange portion at an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide with opposing side walls for receiving the brake cable and enabling winding thereof onto the cam member, wherein the opposing side walls are integral and continuous as one-piece with the cam member;

providing a mounting bracket; and

pivotally mounting the brake actuator lever and the cam member for pivotal movement relative to the mounting bracket in brake applying and releasing directions, the cam member being provided on the brake lever such that the movement of the brake lever in the brake applying direction winds the cable onto the cam member for applying tension to the cable for activating the brake system.

18. A method according to claim 17, wherein said mounting the brake actuator lever and the cam member comprises pivotally mounting the actuator lever for pivotal movement relative to the mounting bracket.

19. A method according to claim 18, wherein the cam member is formed separately from the brake actuator lever, and wherein said providing the cam member comprises: stamping a piece of sheet metal to initially form a cam member having the sheet metal flange portion; and then progressively stamping the flange portion as aforesaid into the general U-shape so as to define the cable guide.

20. A method according to claim 19, wherein said mounting the brake lever and the cam member comprises rotatably mounting said cam member for rotation relative to said brake actuator lever; and

wherein said method further comprises:

providing a clutch releasably coupling said cam member to said brake actuator lever such that said cam member rotates relative to said mounting bracket with movement of said brake actuator lever at least in the brake applying direction, thereby winding the brake cable onto the cam member and applying tension to the cable for activating the brake system, said clutch being operable to release said cam member from the lever such that said cam member is able to rotate relative to said brake actuator lever at least when said lever is in a brake released position; and

connecting a spring to the cam member, said spring biasing said cam member in a slack take-up direction relative to said lever to wind the cable thereon for taking up cable slack when said clutch releases said cam member from the lever.

23. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle, the method comprising:

stamping a single piece of sheet metal to initially form a cam-and-drum member as an integral and continuous one-piece part including a protruding drum portion and a cam portion integral and continuous with the drum portion, the cam portion having a flange portion integral and continuous with the cam portion;

progressively stamping the flange portion to (a) initially bend, by stamping, the flange portion of an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape so as to define a cable guide for receiving the brake cable and enabling winding thereof onto the cam portion, wherein the opposing side walls are integral and continuous as one-piece with the cam-and-drum member;

providing a mounting bracket;

mounting a brake actuator lever for movement relative to the mounting bracket in brake applying and releasing directions;

rotatably mounting said cam-and-drum member for rotation relative to the brake actuator lever;

providing a clutch releasably coupling the cam-and-drum member to the brake actuator lever such that the cam-and-drum member rotates relative to the mounting bracket with movement of the brake actuator lever at least in the brake applying direction, thereby winding the brake cable onto the cam portion and applying tension to the cable for activating the brake system, the clutch being operable to release the cam-and-drum member from the lever such that the cam-and-drum member is able to rotate relative to the brake actuator lever at least when the lever is in a brake released position; and

connecting a spring to the cam-and-drum member, the spring biasing the cam-and-drum member in a slack take-up direction relative to the lever to wind the cable thereon for taking up cable slack when the clutch releases the cam-and-drum member from the lever.

24. A method according to claim 23, wherein said mounting the brake actuator lever comprises pivotally mounting the actuator lever for pivotal movement relative to the mounting bracket.

31. A method for forming a brake actuator for applying tension to a brake cable connected to the brake system of a motor vehicle, the method comprising:

stamping a piece of sheet metal to initially form a cam member having an integral and continuous flange portion;

progressively stamping said flange portion to (a) initially bend, by stamping, the flange portion of an angle to the cam member and then (b) further bend, by subsequent stamping, the flange portion into a general U-shape with opposing side walls integral and continuous as one-piece so as to define a cable guide for receiving the brake cable and enabling winding thereof onto the cam member, wherein the opposing side walls are integral and continuous as one-piece with the cam member;

providing a mounting bracket;

pivotally mounting a brake actuator lever for pivotal movement relative to the mounting bracket;

rotatably mounting said cam member for rotation relative to said brake actuator lever;

providing a clutch releasably coupling said cam member to said brake actuator lever such that said cam member rotates with pivotal movement of said brake actuator lever relative to said mounting bracket at least in a brake applying direction relative to said mounting bracket, thereby winding the brake cable onto the cam member and applying tension to the cable for activating the brake system, said clutch being operable to release said cam member from the lever such that said cam member is able to rotate relative to said brake actuator lever at least when said lever is in a brake released position; and

connecting a spring to the cam member, said spring biasing said cam member in a slack take-up direction relative to said lever to wind the cable thereon for taking up cable slack when said clutch releases said cam member from the lever.

35. A method according to claim 17, wherein the brake actuator lever includes a wall, and wherein the cam member is a portion of the wall and integral and continuous as one-piece with the wall,

wherein the act of providing the cam member includes stamping the sheet metal flange portion from the wall of the brake actuator lever comprising the cam member.

APPENDIX B – EVIDENCE RELIED UPON BY THE EXAMINER

No new evidence pursuant to §§ 1.130, 1.131, or 1.132 or entered by or relied upon by the Examiner is being submitted.

However, Appellants note that the previously submitted Declaration of Steven Demoe filed on June 8, 2007 under Rule 1.132 is already of record in this Appeal, and is submitted with this Brief as Appendix B as being pertinent to any discussion of the state of the parking brake art and the knowledge of a person of ordinary skill in the art at the time of Appellants' invention.

Attorney Docket: 007570-0305498
Client Reference: Dkt. 19-REG

IN THE UNITED STATES PATENT AND TRADEMARK OFFICE

In re PATENT APPLICATION of:

Confirmation Number: 9094

SYKES ET AL.

Application No.: 10/677,250

Group Art Unit: 3683

Filed: October 3, 2003

Examiner: T. WILLIAMS

Title: BRAKE ACTUATOR

RULE 132 DECLARATION OF STEVEN DEMOE

I hereby declare that:

1. I work for the assignee of the above application, Ventra Group Inc. My position is Tooling Manager. My primary responsibility is the manufacturing of automotive parts and the development of tooling for the same, including specifically parking brake actuators. I have worked at Ventra for 14 years on such products, and have had experience with parking brake actuators for 9-10 years.
2. I have a great deal of experience in stamping of sheet metal, and particularly in progressive stamping. Stamping parts from sheet metal is a primary manufacturing technique that Ventra uses. I have worked with stamping processes for 23 years, and manufactured numerous automotive parts that have components made by stamping of sheet metal.
3. I have reviewed the Perisho '249 patent, and do not believe that its alleged one-piece cam 116 can be made from progressive stamping as a practical matter. This is because the cam has two opposed flanges, and these flanges are shown as having the same material thickness as the central main body (see the cross-section of Fig. 5). A single piece of sheet metal could not, in any practical sense, be stamped to create this configuration. In a stamping process, the striking die would impact the sheet metal at a general, right angle to the sheet. While this could form either one of those two flanges, it could not form both. And it certainly could not form both so that the flanges both have a thickness consistent with the central main body as shown.

4. To me, the most practical processes for forming the double-flanged cam member 116 in Perisho '420 would be die casting or powdered metal forming, both which lend themselves to forming more complex three-dimensional shapes better than stamping.

5. I note that the Perisho '249 patent cited in the Examiner's prior rejection teaches a similar one-piece cam made from powdered metal, and points out the advantage of impregnating the powdered metal with oil. The use of oil impregnation would not be realized with stamped sheet metal, as the sheet metal is not sufficiently porous due to the material characteristics required to withstand high impact stamping.

6. Thus, in reviewing both Perisho patents, I can say that it would not have been obvious to me, or any one else of ordinary skill in my art, to form the double-flanged cams shown therein from stamping as claimed in the above application. I am not aware of any stamping technique that could be used practically to form those cams.

7. I understand that the Examiner in the above application alleges that the Kanemitsu patent shows stamping. This is incorrect. Sheet metal stamping is a high impact striking of a die against sheet metal, which is supported on a supporting die. The striking and supporting dies are configured to impart shaping to the sheet metal under the impact force. In progressive stamping, a series of dies are used to sequentially stamp the sheet metal and progressively deform the sheet metal into a desired final shape. This is most conventionally used where the progression from a sheet metal blank to a final shape in one stamping stroke requires too much force, or where it is desired to make a more complex shape that cannot be achieved in a single stamping stroke.

8. Kanemitsu discloses what I can best characterize as a swaging and splitting technique. It is not progressive stamping, and would not be understood as such by anyone with experience in stamping techniques. As can be seen clearly in Kanemitsu's figures, the edge of the sheet metal is thickened by a roller in a technique similar to common swaging. That thickened portion is then sequentially flattened out to create the final structure illustrated. At no point is any stamping technique used to form that shape.

9. I understand that the claims of the above application are being amended to more clearly point out that the methods use progressive stamping wherein the flange portion is initially bent on angle by stamping, and then further bent by subsequent stamping into a general U-shape. This bending is exactly the type of material deformation that occurs in progressive stamping. In contrast, the process in Kanemitsu does not rely on "bending" and instead achieves its final shape by forcibly "flowing" the material from the thickened bulb into

its final shape. Thus, I do not believe that Kanemitsu is relevant to or suggestive of the progressive stamping technique recited in the amended claims of the above application.

10. I hereby declare that all statements made herein of my knowledge are true and all statements made on information and belief are believed to be true; and further that these statements were made with the knowledge that willful false statements and the like so made are punishable by fine or imprisonment, or both, under § 1001 of Title 18 of the United States Code and that such willful false statements may jeopardize the validity of the application or any patents issued therefrom.

Steven Demoe
Steven Demoe

Date: 6/8/07

APPENDIX C – RELATED PROCEEDINGS

NONE

No related proceedings are referenced in Section II of this Brief. above, hence copies of decisions in related proceedings are not provided.